

1     **WHAT IS CLAIMED IS:**

2             1. A trigger assembly for a crossbow having a stock and a transverse  
3     bow with a bowstring, the trigger assembly comprising:

4             a housing adapted to be mounted on the stock and having a top, a bottom,  
5     a front end, a rear end, a side, a mouth with a top and a bottom defined  
6     transversely in the front end and a slot defined transversely through the side and  
7     parallel to the mouth;

8             a trigger mounted pivotally in the housing and having a top portion and a  
9     bottom portion that protrudes out from the bottom of the housing;

10            an actuating lever mounted pivotally in the housing, abutting the top  
11     portions of the trigger and having a front end with a hook and a rear end;

12            a bowstring catch mounted pivotally in the housing and having a front  
13     end, a rear end, a string hook formed on the front end and corresponding to the  
14     mouth in the housing and a leg extending downward from the rear end and  
15     selectively engaging the hook on the actuating lever;

16            a bowstring catch biasing member mounted in the housing between the  
17     top of the housing and the bowstring catch to pivot the string hook out of the  
18     mouth;

19            a safety pin mounted moveably in the housing and having a top and a  
20     bottom that is supported on the rear end of the actuating lever;

21            a safety lock mounted moveably in the housing and having a front end, a  
22     rear end corresponding to and selectively abutting the top of the safety pin and a  
23     push rod extending transversely from the safety lock and out of the slot in the  
24     housing;

1           a pushing arm mounted moveably in the housing and having a bottom, a  
2 front end corresponding to the mouth in the housing, a rear end and a protrusion  
3 abutting the push rod on the safety lock;

4           a block mounted pivotally in the housing and having a transverse rod  
5 extending transversely from the block and selectively engaged by the front end  
6 of the pushing arm;

7           a block biasing member mounted in the housing and connected to the  
8 block to push the block into the mouth when the transverse rod on the block  
9 disengages from the front end of the pushing arm; and

10          a string stop mounted pivotally in the housing , extending into the mouth  
11 and corresponding to the block.

12          2. The trigger assembly as claimed in claim 1, wherein the housing is  
13 composed of two half shells attached to each other.

14          3. The trigger assembly as claimed in claim 2, wherein the pushing arm  
15 further has a notch defined in the bottom at the front end to selectively engage  
16 the transverse rod on the block.

17          4. The trigger assembly as claimed in claim 3, wherein the mouth has a  
18 top and a bottom;

19          the block is pivotally mounted in the housing at the bottom of the mouth  
20 and has a top selectively extending into the mouth and a bottom;

21          the second biasing member has one end connected to the bottom of the  
22 block; and

23          the string stop is pivotally mounted in the housing at the top of the  
24 mouth.

1           5. The trigger assembly as claimed in claim 4 further comprising a sight  
2 mount mounted on the top of the housing to support an aiming device.

3           6. The trigger assembly as claimed in claim 5, wherein the sight mount is  
4 pivotally attached to the top of the housing and has a bottom, a pivot point, a  
5 front segment forward of the pivot point and a rear segment aft of the pivot point;  
6 and

7           an adjusting device is mounted in the housing to adjust the sight mount  
8 vertically relative to the housing, and the adjusting device comprises

9           an adjustment knob rotatably mounted in the rear end of the housing and  
10 having a stub with an outer periphery rotatably extending into the housing and a  
11 cam formed on the outer periphery of the stub;

12           a pushing block mounted moveably in the housing and having a top  
13 extending out from the top of the housing and abutting the bottom of the sight  
14 mount in the rear segment and a concave bottom abutting the cam on the  
15 adjustment knob; and

16           a sight mount biasing member mounted between the top of the housing  
17 and the bottom of the sight mount at the front segment.

18           7. The trigger assembly as claimed in claim 6 further comprising a  
19 resilient arrow retainer mounted on the top of the housing and extending  
20 downward to correspond to the mouth in the housing.

21           8. The trigger assembly as claimed in claim 1, wherein the pushing arm  
22 further has a notch defined in the bottom at the front end to selectively engage  
23 the transverse rod on the block.

24           9. The trigger assembly as claimed in claim 1, wherein the mouth has a

1 top and a bottom;

2 the block is pivotally mounted in the housing at the bottom of the mouth

3 and has a top selectively extending into the mouth and a bottom;

4 the second biasing member has one end connected to the bottom of the

5 block; and

6 the string stop is pivotally mounted in the housing at the top of the

7 mouth.

8 10. The trigger assembly as claimed in claim 1 further comprising a sight

9 mount mounted on the top of the housing to support an aiming device.

10 11. The trigger assembly as claimed in claim 8, wherein the sight mount

11 is pivotally attached to the top of the housing and has a bottom, a pivot point, a

12 front segment forward of the pivot point and a rear segment aft of the pivot point;

13 and

14 an adjusting device is mounted in the housing to adjust the sight mount

15 vertically relative to the housing, and the adjusting device comprises

16 an adjustment knob rotatably mounted in the rear end of the housing and

17 having a stub with an outer periphery rotatably extending into the housing and a

18 cam formed on the outer periphery of the stub;

19 a pushing block mounted moveably in the housing and having a top

20 extending out from the top of the housing and abutting the bottom of the sight

21 mount in the rear segment and a concave bottom abutting the cam on the

22 adjustment knob; and

23 a sight mount biasing member mounted between the top of the housing

24 and the bottom of the sight mount at the front segment.

1            12. The trigger assembly as claimed in claim 1 further comprising a  
2 resilient arrow retainer mounted on the top of the housing and extending  
3 downward to correspond to the mouth in the housing.